

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: HSIAO, Cheng-Fang

SERIAL NO.: 10/687,141

ART UNIT: 2834

FILED: October 17, 2003

EXAMINER: Nguyen, T.N.

TITLE: COOLING FAN STRUCTURE

AMENDMENT "B"

Director of the U.S. Patent  
and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Office Action of November 22, 2004, a response being due with a Request for Continued Examination by February 22, 2005, please consider the following remarks:

REMARKS

Upon entry of the present response, previous Claims 5 - 8 and new Claims 9 - 11 substituted therefor. Reconsideration of the rejections, in light of the foregoing amendments and present remarks, is respectfully requested. The present response has been entered for the purpose of distinguishing the present invention from the prior art references.

In the Office Action, it was indicated that Claims 5 - 8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Brown patent in view of the Suzuki publication.

As an overview to the present reply, Applicant has extensively amended the original claim language in the form of new Claims 9 - 11. New independent Claim 9 incorporates the limitations of previous independent Claim 5, along with the limitations of dependent Claim 6. In particular,

independent Claim 9 further recites that the ring stator supports “an axle fixedly positioned centrally therein”. It was indicated that the ring stator has at least two series of polar claws “formed on an inner wall thereof”. The plurality of blades are now recited as “rotatably mounted on said axle”. Additionally, and furthermore, it is indicated that the magnetic ring rotor means are induced by the coil of the ring stator so as to drive the plurality of blades “in rotation upon said axle”. Applicant respectfully contends that these serve to distinguish the present invention from the prior art combination.

With respect to the Brown patent, Applicant agrees with the Examiner’s analysis that the Brown patent fails to show the “limitations of a ring stator mounted in said interior opening of said base, that the ring stator has an annular periphery with a coil wrapped entirely therearound, that the series of polar claws are bent along an inner side of the ring stator opposite the coil, and that the ring stator has a series of two or more polar claws”. In contrast the Examiner’s arguments, Applicant respectfully contends that the Brown patent does not show a “base”. According to the Examiner, the base is illustrated by the reference numerals “31” and “33”. However, the description of such a structure was recited in the Brown patent in column 3, lines 50 - 51 as follows:

Three strut members 33 connect to and radiate outwardly from the center of stator housing 31

As such, there is no structure whereby the stator is mounted in an interior opening of the base. Fundamentally, with the structure of the Brown patent, the ring stator (illustrated by reference numerals 31 and 33) cannot have an annular periphery with a coil wrapped entirely therearound. In the Brown patent any charges that are produced by the coils are intended to rotate the ring stator in

one direction or an other. This structure was recited in the Brown patent in column 3, lines 55 - 62 (as also recited in the previous Amendment “A”).

The Suzuki publication describes a stepping motor. Applicant respectfully contends that the field of stepping motors is very far removed from the field of cooling fans. One having ordinary skill in the art must discern something from the Brown patent that would allow them to seek the teachings of the Suzuki patent in order to combine references from the Suzuki patent with the structure of the Brown patent. Applicant’s attorney could find nothing in the disclosure of the Brown patent which would lead one to adopt the structure of the Suzuki patent. The application of the stepping motor technology of the Suzuki patent to the structure of the fan of the Brown patent is simply hindsight analysis. Fundamentally, Applicant’s attorney has great difficulty seeing how the various components of the Suzuki patent can be integrated into the Brown patent so as to replace of the structure of the Brown patent. In particular, various questions arise such as: (1) Why would one ever replace the four corner-mounted coils with an entirely circular structure?; (2) Why would the relatively square shape of the stator housing be replaced with the frame-like structure of the Suzuki patent?; and (3) Where are the polar claws to be placed on the structure of the Brown patent for the purposes of rotating the fan? Applicant respectfully contends that these features would not be contemplated by one having ordinary skill in the art of the Brown patent since the Brown patent has the intention of allowing the rotation of a cooling fan in different directions.

The Suzuki patent is designed so as to support a shaft. The coil structure is intended to allow for the rotation of a shaft for the purpose of driving a connected item. As such, the Suzuki patent would have no need to install fan blades therein. Fundamentally, the Suzuki patent lacks the “base with a circular area”. The Suzuki patent lacks the polar claws located on the inner wall of the rotor.

It appears that the polar claws 13a and 13b are actually mounted on the rotor. The Suzuki patent does not have any blades. The Suzuki patent lacks a fan structure, in the form of blades, rotatably mounted on the central axle of the stator.

The prior art combination of the Brown and Suzuki patents fundamentally lacks the “base having an interior opening of a circular configuration”. In the Brown patent, the structure indicated by reference numerals 31 and 33 are actually a “stator housing” and not the base. As agreed by the Examiner, the Brown patent does not disclose “the ring stator mounted in the interior opening of the base”. The Suzuki patent is not indicated by the Examiner as having such a base. If there is such a base structure in the Suzuki patent, then the base structure would be indicated by the flanges 1 and 15 located on the opposite sides of the stator. Quite clearly, these flanges do not include the “interior opening” such that the ring stator is mounted within this interior opening of circular configuration. As such, the combination of the Brown patent and the Suzuki publication would lack this limitation. The combination of the Brown patent and the Suzuki patent would lack the ring stator supporting an axle fixedly positioned centrally thereof. In the Suzuki patent, there is a shaft, but the shaft is rotatable relative to the rotation of the rotor. To the extent that the shaft 3 of the Suzuki patent is an “axle”, it is not “fixedly” positioned. The combination of the Brown patent and the Suzuki publication would lack the ring stator as having “at least two series of polar claws formed on an inner wall thereof”. The polar claws of the Suzuki patent are actually mounted on the rotor which drives the shaft. This is the opposite of the present invention.

The prior art Brown patent and the Suzuki publication would lack this element of the “plurality of blades rotatably mounted on the axle and mounted in the interior opening of the base and the interior of ring stator”.

Although the Suzuki publication does show a ring stator with a coil wrapped entirely therearound, Applicant respectfully contends that there is no structure in the Brown patent which would allow such an arrangement. The stator housing of the Brown patent is of a rectangular configuration. As such, it is very difficult to see how a coil could or should be wrapped around such a rectangular configuration. Applicant respectfully contends that the combination of the Suzuki publication with the Brown patent for the purpose of showing such a feature is untenable. On this basis Applicant respectfully contends that the prior art combination of the Brown patent and the Suzuki publication does not “make obvious” the teachings of the present invention.

Relative to advantages that are achieved by the present invention, these features were recited in the original specification in paragraph [0024] as follows:

The advantages of the present invention over the prior art counterparts are thus readily apparent. In light of the ring stator 32 being directly mounted in the inner edge of the base 31 and the polar claws 34 being bent to form in the inner side of the ring stator 32, the coil 33 can be wound directly on the ring stator 32. The insulation of the polar claws 34 enhances the assembling efficiency and the winding efficiency of the present invention, thereby reducing the rejection rate of the product. An increase in the layout set of the polar claws 34 enhances the operating stability of the structure of the present invention. The alternate layout of a plurality of ring stators 32 and coils 33 results in an increase in operational phase so as to eliminate the operating dead point of the structure. The ventilation area of the structure of the present invention is greatly enlarged by virtue of the magnetic ring rotor 38 being mounted on the connection ring 37 to minimize the size of the rotor seat. The blade turbulence is reduced by the magnetic ring rotor 38 and the connection ring 37.

Applicant respectfully contends that there is no teaching or suggestion in the prior art as to how the combination of the Brown patent and the Suzuki publication could, in any way, achieve such advantages. Quite clearly, it would be very difficult to wrap a coil around the generally rectangular

stator housing, such as that shown in the Brown patent. Quite clearly, there is no teaching of the alternate layout of the plurality of ring stators and coils of the present invention. On this basis, Applicant respectfully contends that the present invention achieves advantages that are neither shown nor suggested by the prior art combination.

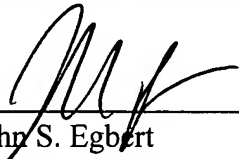
Dependent Claims 10 and 11 correspond to previous dependent Claims 7 and 8.

Based upon the foregoing analysis, Applicant contends that independent Claim 9 is now in proper condition for allowance. Additionally, those claims which are dependent upon Claim 9 should also be in condition for allowance. Reconsideration of the rejections is requested and allowance of the claims at an early date is earnestly solicited. Since no additional claims have been added above those originally paid for, no additional fee is required.

Respectfully submitted,

Date

1-27-05

  
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CERTIFICATE OF MAILING UNDER 37 CFR 1.8(a)

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I hereby certify that the attached correspondence comprising:

AMENDMENT "B"

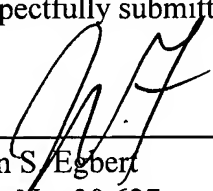
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on **JAN 28 2005**

Respectfully submitted,

**JAN 28 2005**  
\_\_\_\_\_  
Date

  
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